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## ABSTRACT

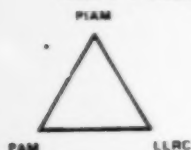
Environmental control units, or ECUs, are devices or systems which allow for alternate access to electronic or electrical devices and those objects, like draperies and doors, which may be adapted for use with electricity. Such devices offer the person with a mobility limitation the opportunity to control his or her environment, thus enhancing the ability to live, work, and play more independently. An environmental control system consists of a main control unit, an input method, a feedback unit or information display, and the devices to be controlled. More complex systems combine an ECU with a microcomputer or augmentative communication device. Typical input modes include switches, joystick, voice, keypad, or computer interface. ECUs utilize a variety of control schemes, including infrared, ultrasound, radio waves, and AC (alternating current) power lines. Guidelines are presented for choosing an ECU. A table lists 51 ECUs available, the method by which they are accessed, the types of devices controlled, and price range. Each product is then described, and the name, address, and telephone number of the producer or distributor is provided. (JDD)

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# PAM REPEATER

## ENVIRONMENTAL CONTROLS

NO. 83



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*This edition of the PAM REPEATER is a product of research done at the LLRC in order to provide our readers with a timely look at these specialized products. The guest editor is Helen Schneiderman, a special projects consultant and PIAM Board Member, who has been assisting at the LLRC since October of 1993. She is a former Deputy Director of the Michigan Commission on Handicapper Concerns. Helen has enjoyed the friendly atmosphere at the LLRC, working with the staff, and enhancing her knowledge of assistive technology.*

## ENVIRONMENTAL CONTROLS

The ability to control one's environment and function independently of others is a skill taken for granted by most people. For those individuals with mobility limitations, however, mastery of their immediate surroundings can be a challenge, and is a task critical to achieving or regaining the ability to live independently.

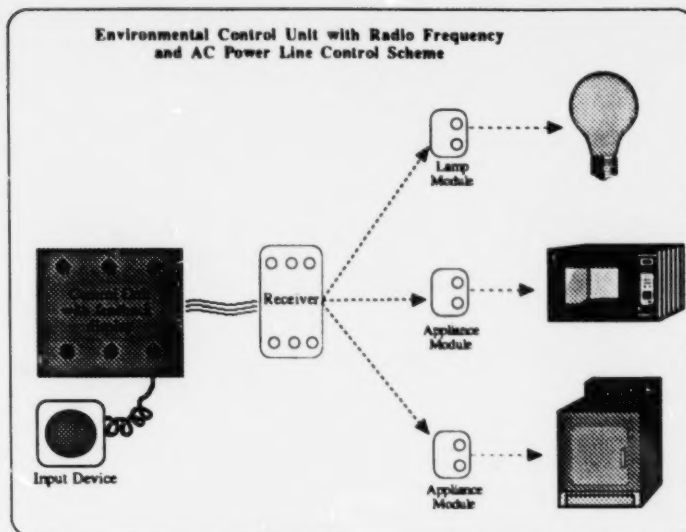
Environmental control units, or ECUs, are devices or systems which allow for alternate access to electronic or electrical devices, and those objects, like draperies and doors, which may be adapted for use with electricity. Such devices offer the person with a mobility limitation the opportunity to control his or her immediate environment, thus enhancing the ability to live, work, and play more independently.

ECUs vary in their degree of complexity. Simple and familiar environmental controls include the remote control for a television or VCR. More elaborate units, such as computer-controlled systems, allow for hands free operation, and control a variety of objects in the home or workplace. For instance, an ECU can enable the user to turn appliances on and off, dim lights, tune a radio or television, open a door, and answer and place telephone calls.

ECUs are differentiated by how they may be operated or accessed; typical input modes include switches, joystick, voice, keypad, or computer interface. Further, ECUs utilize a variety of control schemes, including infrared, ultrasound, radio waves, and AC power line. The mode of operation determines whether devices in one room can be controlled from a different room; for example, infrared signals do not travel through walls. ECUs capable of operating a wide range of objects in the home or workplace are oftentimes a combination of control schemes.

EC 303271

An environmental control system consists of a main control unit, an input method, a feedback unit or information display, and the devices to be controlled. Systems which use existing household wiring, or X-10 technology, to remotely control appliances and lamps require, in addition, plug-in modules for each device. More powerful and complex systems combine an ECU with a microcomputer or augmentative communication device. These systems utilize an interface between the control unit and computer, a software program, and a variety of input devices.



The grid that follows details the variety of ECUs available, the method by which they are accessed, the type of device (s) controlled, and price range.

### Choosing an Environmental Control System

The most appropriate ECU matches the goals and functional abilities of the user, the devices to be controlled, and the environment in which it will be used. The decision or choice to use an ECU belongs to the intended user. A variety of issues need to be considered, however, to determine the ECU most appropriate to meet the needs and abilities of that individual. Questions which require answers include:

1. What are the user's functional abilities? How will the user access the ECU?
2. What does the user want to accomplish? What does the user want to control?
3. How much money is the user able to spend?

One way to begin the assessment process is to survey the environment in which the ECU will be used. A tour of the home or workplace for which environmental controls are desired is the first step. In addition, identify the position from which the user will access the ECU, for example, from bed or wheelchair.

Using the grid, identify those products which fit within the user's budget. Next, determine which input or access mode is compatible with the user's functional abilities. An additional issue to consider includes other people in the user's environment who may require control of appliances or devices. It is important to allow those individuals access which does not interfere with the primary user's control.

Once potentially suitable products have been identified, contact manufacturers for more specific information about the units, including the names of companies that install, provide training, service, and maintenance. As the table of products is not exhaustive, and the development of new devices and improvements to those existing occurs regularly, be sure to ask about new products which may not have existed when this publication was produced.

## Environmental Control Products by Input Method, Devices Controlled, and Price Range

| Product Name                           | Input Method |           |       |         |        | Devices Controlled |      |          |           |              |       | Price Range     |             |             |               |               |               | Call For Price |
|----------------------------------------|--------------|-----------|-------|---------|--------|--------------------|------|----------|-----------|--------------|-------|-----------------|-------------|-------------|---------------|---------------|---------------|----------------|
|                                        | Switch       | Joy-stick | Voice | Key-pad | Serial | AC Appliance       | X-10 | Infrared | Telephone | Hospital Bed | Other | Less than \$200 | \$200-\$499 | \$500-\$999 | \$1000-\$1999 | \$2000-\$2999 | \$3000-\$4999 |                |
| ACS Controller                         | X            |           | X     | X       | X      |                    | X    | X        | X         | X            |       |                 |             |             |               |               | X             |                |
| AP-5000                                | X            |           |       |         |        |                    | X    |          | X         | X            |       |                 | X           |             |               |               |               |                |
| Butler-In-A-Box                        |              |           | X     | X       | X      |                    | X    | X        | X         | X            | X     |                 |             |             |               |               |               | X              |
| CCT Environmental Control              | X            |           |       | X       | X      |                    | X    |          |           |              |       |                 | X           |             |               |               |               |                |
| CHEC 2                                 | X            |           |       |         |        |                    | X    | X        | X         |              |       |                 |             |             |               |               |               | X              |
| CINTEX                                 | X            |           | X     |         | X      |                    | X    | X        | X         |              |       |                 |             |             | X             |               |               |                |
| CINTEX2                                |              |           | X     |         | X      |                    | X    | X        | X         |              |       |                 |             |             | X             |               |               |                |
| Control 1                              | X            |           |       |         | X      |                    | X    |          | X         | X            |       |                 |             |             | X             |               |               |                |
| DEUCE                                  | X            |           |       |         |        |                    | X    |          | X         | X            |       |                 |             |             | X             |               |               |                |
| Director                               |              |           |       |         | X      |                    | X    | X        |           |              |       |                 | X           |             |               |               |               |                |
| EZ-Control                             | X            |           | X     |         | X      |                    | X    | X        | X         |              |       |                 |             |             |               | X             |               |                |
| EZRA                                   | X            |           |       |         |        |                    | X    | X        | X         | X            |       |                 |             |             | X             |               |               |                |
| Free Switch                            | X            |           |       |         |        |                    | X    |          |           |              |       | X               |             |             |               |               |               |                |
| GEWA Infra-Link "Smart House"          | X            |           |       | X       |        |                    |      | X        |           |              |       |                 |             |             |               |               |               | X              |
| GEWA Infra-Link Speaker-Telephone      | X            |           |       |         |        |                    |      |          | X         |              |       |                 | X           |             |               |               |               |                |
| HAL-ES System                          |              |           | X     |         | X      |                    | X    | X        | X         |              |       |                 |             |             | X             |               |               |                |
| HECS                                   | X            |           |       |         |        | X                  |      |          | X         | X            |       |                 |             |             |               |               | X             |                |
| Ideal-Phone                            |              |           |       |         | X      |                    |      |          | X         |              |       |                 | X           |             |               |               |               |                |
| Imperium 100                           | X            |           |       |         |        |                    | X    |          |           |              |       |                 | X           |             |               |               |               |                |
| Independence VoicePhone                | X            |           | X     |         |        |                    |      |          | X         |              |       |                 | X           |             |               |               |               |                |
| Infra-Link Remote Control for Elevator | X            |           |       |         |        |                    |      | X        |           |              |       |                 |             |             |               |               |               | X              |
| LIAISON                                | X            | X         |       |         | X      |                    | X    | X        | X         |              |       |                 |             |             |               |               | X             |                |

Definitions: Serial – Device controls household items via a computer or communication device. Some products offer alternate control schemes.

AC Appliance – These plug directly into the control unit.

X-10 – Device controls AC appliances via household wiring.

Infrared – Device controls those household items which commonly operate via remote control.

# Environmental Control Products by Input Method, Devices Controlled, and Price Range

| Product Name                          | Input Method |           |       |         |        | Devices Controlled |      |          |           |              |       | Price Range     |             |             |               |               |               | Call For Price |
|---------------------------------------|--------------|-----------|-------|---------|--------|--------------------|------|----------|-----------|--------------|-------|-----------------|-------------|-------------|---------------|---------------|---------------|----------------|
|                                       | Switch       | Joy-stick | Voice | Key-pad | Serial | AC Appliance       | X-10 | Infrared | Telephone | Hospital Bed | Other | Less than \$200 | \$200-\$499 | \$500-\$999 | \$1000-\$1999 | \$2000-\$2999 | \$3000-\$4999 |                |
| Power-Access Automatic Door Opener    | X            |           |       |         |        |                    |      |          |           |              | X     |                 |             |             | X             |               |               |                |
| PowerLink 2                           | X            |           |       |         |        | X                  |      |          |           |              |       | X               |             |             |               |               |               |                |
| PowerNow                              |              |           |       |         | X      |                    | X    | X        | X         |              |       |                 |             | X           |               |               |               |                |
| PROXi                                 | X            |           | X     | X       | X      |                    | X    | X        | X         | X            |       |                 |             |             |               |               | X             |                |
| RC-3000--Remote Control               | X            |           |       | X       |        |                    |      |          | X         |              |       |                 | X           |             |               |               |               |                |
| Relax                                 | X            |           |       |         |        |                    |      | X        |           |              |       |                 |             | X           |               |               |               |                |
| Relax                                 | X            |           |       |         |        |                    |      | X        |           |              |       |                 |             | X           |               |               |               |                |
| Sapura S2000 HF                       | X            |           | X     |         |        |                    |      |          | X         |              |       | X               |             |             |               |               |               |                |
| Scan Com                              | X            |           |       |         | X      |                    | X    | X        |           |              |       |                 |             |             | X             |               |               |                |
| Scanning Director                     | X            |           |       |         |        |                    | X    | X        |           |              |       |                 |             | X           |               |               |               |                |
| Scanning Remote Control               | X            |           |       |         |        |                    |      | X        |           |              |       |                 | X           |             |               |               |               |                |
| Scanning X-10 Powerhouse              | X            | X         |       |         |        |                    | X    |          |           |              |       |                 |             | X           |               |               |               |                |
| SenSei                                |              |           |       |         | X      |                    | X    | X        | X         | X            |       |                 |             |             |               |               |               | X              |
| Simplicity Series 5                   |              |           | X     |         |        |                    | X    | X        | X         | X            |       |                 |             |             |               |               | X             |                |
| Simplicity Series 7                   | X            |           |       |         |        |                    | X    | X        | X         | X            |       |                 |             |             |               |               | X             |                |
| Single Appliance Continuous Control   | X            |           |       |         |        | X                  |      |          |           |              |       | X               |             |             |               |               |               |                |
| Single Switch TV Control Unit         | X            |           |       |         |        |                    |      |          |           |              | X     | X               |             |             |               |               |               |                |
| Single-Switch Multi Appliance Control | X            |           |       |         |        |                    | X    |          |           |              |       |                 | X           |             |               |               |               |                |
| SIR-Handheld                          |              |           |       | X       |        |                    |      | X        |           |              |       | X               |             |             |               |               |               |                |
| Synergy Integrated Remote             |              |           |       |         | X      |                    | X    | X        |           |              |       |                 |             | X           |               |               |               |                |
| TEAM                                  |              |           |       |         | X      |                    | X    | X        |           |              |       |                 | X           |             |               |               |               |                |
| U-Control                             |              |           |       |         | X      |                    | X    | X        |           |              |       |                 | X           |             |               |               |               |                |

Definitions: Serial - Device controls household items via a computer or communication device. Some products offer alternate control schemes.

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Infrared - Device controls those household items which commonly operate via remote control.

## Environmental Control Product Descriptions

### Product

### Description

**ACS Controller**  
ACS Technologies, Inc.  
1400 Lee Drive, Suite 3  
Corapolis, PA 15108  
800-227-2922

The ACS Controller can be operated by keyboard input, scanning, and voice. It transmits ultra sound to operate the TASH Ultra-4 remote receiver and radio frequency, via X-10 modules, to control up to 256 electronic devices. Additionally, it can directly operate most devices controlled by infrared signals.

**AP-5000**  
DQP  
3001 Deep Lake Road  
Colville, WA 99114  
916-477-1234

Using scanning technology, the AP-5000 controls up to eight user-selectable/definable functions by whistle or optional plug-in switch.

**Butler-In-A-Box**  
Mastervoice  
10523 Humbolt Street  
Los Angeles, CA 90720  
310-594-6581

Butler-In-A-Box is a comprehensive, voice-activated environmental control system with speech output. The unit recognizes two different voices, allows for 32 voice commands for each user, and responds in a male or female voice in any personality desired.

**CCT Environmental Control**  
Consultants for Communication Technology  
508 Bellevue Terrace  
Pittsburgh, PA 15202  
412-761-6062

The CCT Environmental Control Unit operates from a computer-based communication device. With the activation of a single switch, or directly from the keyboard, up to 16 electrical switches and outlets can be controlled on-screen.

**CHEC 2**  
Bloorview Children's Hospital  
25 Buchan Ct.  
Willowdale, ON M2J 4S9  
416-494-2222

The Computer Home Environmental Control (CHEC 2) system uses dual switches to control 110 volt AC appliances, infrared devices, and telephones.

**CINTEX**  
NanoPac, Inc.  
4833 South Sheridan Road, Suite 402  
Tulsa, OK 74145-5718  
918-665-0329

Via switch access or voice, CINTEX is comprehensive environmental control software which also performs word processing, music composition, and speech synthesis functions.

**CINTEX2**  
NanoPac, Inc.  
4833 South Sheridan Road, Suite 402  
Tulsa, OK 74145-5718  
918-665-0329

Cintex2 is a comprehensive environmental control system combined with word processing. The system works in conjunction with the IBM Voice Type or Dragon Dictate voice recognition system.

**Control 1**  
Prentke Romich  
1022 Heyl Rd.  
Wooster, OH 44691  
800-262-1990

Control 1 is an environmental control unit which may be operated by dual switch, communication aid, or microcomputer. Through the use of eight control receptacles, and optional control modules, the unit can operate up to 256 electrical devices.

# Environmental Control Products by Input Method, Devices Controlled, and Price Range

| Product Name                      | Input Method |           |       |         |        | Devices Controlled |      |          |           |              |       | Price Range     |             |             |               |               |               | Call For Price |
|-----------------------------------|--------------|-----------|-------|---------|--------|--------------------|------|----------|-----------|--------------|-------|-----------------|-------------|-------------|---------------|---------------|---------------|----------------|
|                                   | Switch       | Joy-stick | Voice | Key-pad | Serial | AC Appliance       | X-10 | Infrared | Telephone | Hospital Bed | Other | Less than \$200 | \$200-\$499 | \$500-\$999 | \$1000-\$1999 | \$2000-\$2999 | \$3000-\$4999 |                |
| UCS 1000 with Tongue Touch Keypad |              |           |       | X       |        |                    | X    | X        |           | X            |       |                 |             |             |               |               |               | X              |
| Ultra 4 Remote System             |              |           |       | X       |        |                    | X    |          |           |              |       |                 | X           |             |               |               |               |                |
| ViewKey                           | X            |           |       |         | X      |                    | X    |          |           |              |       | X               |             |             |               |               |               |                |
| Wireless Remote VCR Controller    |              |           |       | X       |        |                    |      |          |           |              | X     | X               |             |             |               |               |               |                |
| Wireless TV Remote Control        |              |           |       | X       |        |                    |      |          |           |              | X     | X               |             |             |               |               |               |                |
| X-10 Home Control interface       |              |           |       |         | X      |                    | X    |          |           |              |       |                 |             |             |               |               |               | X              |
| X-10 Powerhouse                   |              |           |       |         | X      |                    | X    |          |           |              |       | X               |             |             |               |               |               |                |

Definitions: Serial - Device controls household items via a computer or communication device. Some products offer alternate control schemes.

AC Appliance - These plug directly into the control unit.

X-10 - Device controls AC appliances via household wiring.

Infrared - Device controls those household items which commonly operate via remote control.

## **Product**

## **Description**

### **DEUCE**

DU-IT

8765 Twp. Rd. 513

Shreve, OH 44676-9421

216-567-2906

DEUCE is an environmental control unit which operates a telephone, 4 AC outlets on the back of the unit, 4 outlets for special accessories, and is designed to send signals through household wiring to control lamps and appliances.

### **Director**

Prentke Romich

1022 Heyl Rd.

Wooster, OH 44691

800-262-1990

Director is an environmental control system designed to operate with speech-output communication devices such as Touch Talker, Light Talker, Liberator, or with other devices which output ASCII code in an RS232 serial format. The Director controls any item that uses a remote control and can operate household appliances and lamps with optional electrical modules.

### **EZ-Control**

Neil Squire Foundation

1046 Deep Cove Road

North Vancouver, BC V7G 1S3

604-929-2414

The E-Z Control is a switch-operated environmental control system. Its modular design allows the user to purchase only the desired components.

### **EZRA**

KY Enterprises

3039 E. 2nd St.

Long Beach, CA 90803-5164

310-433-5244

EZRA is a switch-operated environmental control system. EZRA's control unit plugs into a television, dedicated to EZRA, to operate infrared and 110 volt, AC appliances.

### **Free Switch**

Adaptech, Inc.

ISU Research Park 2501 North Loop Drive

Ames, IA 50010

800-723-2783

The Free Switch controls up to 4 AC-powered devices via a Taction pad, or touch sensitive switch.

### **GEWA Infra-Link "Smart House"**

Infra-Link, Inc

P. O. Box 1008

Portland, OR 97207-1008

800-395-3596

The Gewa "Smart House" offers comprehensive environmental control of all electrical devices in the home as well as those objects convertible to AC current, such as draperies, doors and windows. All devices are controlled by multi-fuction Infra-Link transmitters.

### **GEWA Infra-Link Speaker-Telephone**

Infra-Link, Inc.

P. O. Box 1008

Portland, OR 97207-1008

800-395-3596

The GEWA Infra-Link Speaker Telephone is a modified Panasonic Speaker-Phone that allows for hands-free, remote operation.

### **HAL-ES System**

Circuit Rider Corp.

2914 Russell Avenue North

Minneapolis, MN 55411-1068

612-588-7019

The Home Automation Link (HAL) system provides voice recognition, speech synthesis, and environmental control for the IBM AT or compatibles. Accessed through the HAL Entry System, the environmental control software allows for voice operation of infrared, 110 volt, AC-controlled devices, and telephones.

## **Product**

## **Description**

### **HECS**

Prentke Romich  
1022 Heyl Rd.  
Wooster, OH 44691  
800-262-1990

Originally designed for a hospital or rehabilitation center environment, the Hospital/Home Environmental Control System (HECS) allows a non-ambulatory patient to control a variety of devices, including a nurse call, telephone, TV, and electric bed through the use of a single switch.

### **Ideal-Phone IDEAMATICS**

1364 Beverly Road, Suite 101  
McLean, VA 22101-3617  
703-903-4972

Operated via a personal computer, Ideal-Phone allows the user to place and receive calls from the keyboard.

### **Imperium 100**

Teledyne Brown Engineering  
P. O. Box 897  
Jackson, AL 36545-0897  
800-944-8002

The Imperium 100 environmental control system is a switch-activated unit which controls 110 volt AC devices via household wiring.

### **Independence VoicePhone**

InvoTek  
700 West 20th Street, ENRC  
Fayetteville, AR 72701  
501-575-7659

The Independence VoicePhone is switch-activated and voice-operated. The device has memory for up to fifty phone numbers.

### **Infra-Link Remote Control for Elevator**

Infra-Link, Inc.  
P. O. Box 1008  
Portland, OR 97207-1008  
800-395-3596

The Infra-Link Remote Control for Elevators allows for wireless control of elevator operations including opening doors, selecting floors, and activating the emergency call button.

### **LIAISON**

DU-IT  
8765 Twp. Rd. 513  
Shreve, OH 44676-9421  
216-567-2906

LIAISON is an integrated computer work station, designed for individuals with high-level spinal cord injuries, that includes the full range of environmental control features.

### **Power-Access Automatic Door Opener**

Minnesota Automated Technologies, Inc.  
6416 Indian Hills Road  
Minneapolis, MN 55439  
612-944-1494

The Power-Access Automatic Door Opener is operated by an electrical signal and may be activated by a wide array of controls adapted for special needs.

### **PowerLink 2**

AbleNet  
1081 Tenth Avenue S.E.  
Minneapolis, MN 55414-1312  
800-322-0956

PowerLink 2 allows switch access to operate up to two electrical appliances connected directly to the control unit.

## Product

## Description

### **PowerNow**

afko International, Inc.  
1438 West Broadway, Suite B240  
Tempe, AZ 85282  
602-731-9805

PowerNow is a portable environmental control system that allows, via X-10 technology, Macintosh PowerBook users to control electrical appliances as well as infrared devices.

### **PROXi**

Madenta Communications Inc.  
9411A-20 Ave.  
Edmonton, AB T6N 1E5  
403-450-8926

PROXi is a fully integrated environmental control system operated by a Macintosh or IBM-compatible computer. On-screen images provide complete control of the telephone, lights, infrared devices, and intercom. It can be accessed by voice, point and click, keyboard, or single switch.

### **RC-3000--Remote Control Speakerphone**

Ameriphone  
7231 Garden Grove Blvd. Suite E  
Garden Grove, CA 92641-4219  
714-897-0808

Accessed by either switch or large button keypad, the RC-3000 automatically dials the "operator" or whatever number is stored in the first memory position. Incoming calls may be answered by pressing the remote button.

### **Relax**

Synergy  
66 Hale Road  
East Walpole, MA 02032  
508-668-7424

The Relax remotely controls infrared devices via a single switch, scanning operation. Non-infrared devices may be controlled with the purchase of an X-10 Controller and X-10 modules.

### **Relax**

TASH  
Unit 1-91 Station Street  
Ajax, ON L1S 3H2  
905-686-4129

Relax is an infrared transmitter operated by a single switch to control infrared devices. The unit can be programmed to accept up to 40 remote functions (10 functions on 6 devices). Control of AC appliances is possible with purchase of the optional X-10 Controller.

### **Sapura S2000 HF**

Temasek Telephone, Inc.  
260 East Grand Ave. #19  
South San Francisco, CA 94080  
800-647-8887

The Sapura S2000 HF is a voice-activated, hands free speaker phone that answers incoming calls. The optional sip and puff attachment allows the user to place outgoing calls.

### **Scan Com**

Med Labs  
28 Vereda Cordillera  
Goleta, CA 93117  
805-968-2486

Scan Com offers a computer-based environmental control system that operates both AC and infrared devices.

### **Scanning Director**

Prentke Romich  
1022 Heyl Rd.  
Wooster, OH 44691  
800-262-1990

The Scanning Director allows the user to operate any device controlled with a remote. With optional electrical modules, the user is able to control standard 110 volt, AC appliances and lamps.

## Product

## Description

### **Scanning Remote Control DU-IT**

8765 Twp. Rd. 513  
Shreve, OH 44676-9421  
216-567-2906

The DU-IT Scanning Remote Control is an infrared remote control unit designed to replace hand-held, finger-operated devices. It enables the user to operate a variety of infrared-controlled devices.

### **Scanning X-10 Powerhouse**

Prentke Romich  
1022 Heyl Rd.  
Wooster, OH 44691  
800-262-1990

The Scanning X-10 Powerhouse is a switch operated scanning device which controls up to 8 electrical appliances. Purchase of another receiver allows for control of an additional 8 devices. The unit is also operable via the joystick on powered wheelchairs with ECU ports.

### **SenSei**

Safko International, Inc.  
1438 West Broadway, Suite B240  
Tempe, AZ 85282  
602-731-9805

The Sensei Computer System is a comprehensive environmental control system which combines both hardware and software components to control a full range of electrical appliances, infrared devices, and the telephone.

### **Simplicity Series 5**

Quartet Technology Inc.  
52 Davis Rd.  
Tyngsboro, MA 01879  
508-692-9313

The Simplicity Series 5 is voice-activated and responds in a human voice. The unit is "trainable" to the user's voice in as little as 4 minutes.

### **Simplicity Series 7**

Quartet Technology Inc.  
52 Davis Rd.  
Tyngsboro, MA 01879  
508-692-9313

Via voice menu, the Simplicity Series 7 allows the user to list and select the desired operation with a variety of switching alternatives.

### **Single Appliance Continuous Control Unit**

Toys for Special Children  
385 Warburton Ave.  
Hastings-On-Hudson, NY 10706  
800-832-8697

This unit, which works much like a standard garage door opener, allows the user to operate any AC appliance or device by continuously depressing the cordless remote switch.

### **Single Switch TV Control Unit**

Toys for Special Children  
385 Warburton Ave.  
Hastings-On-Hudson, NY 10706  
800-832-8697

This cordless unit allows the user to control the basic functions of any television set by operating a single switch (not included with unit).

### **Single-Switch Multi Appliance Control Unit**

Toys for Special Children  
385 Warburton Ave.  
Hastings-On-Hudson, NY 10706  
800-832-8697

Using radio signals, this cordless unit allows the user to control up to 8 AC appliances by operating a single switch remote.

## Product

## Description

### **SIR-Handheld**

Synergy  
66 Hale Road  
East Walpole, MA 02032  
508-668-7424

The SIR-Handheld remotely operates infrared devices and is intended for use by individuals with good hand control. Non-infrared devices may be controlled with the purchase of an X-10 controller and X-10 modules.

### **Synergy Integrated Remote**

Synergy  
66 Hale Road  
East Walpole, MA 02032  
508-668-7424

The Synergy Integrated Remote is an environmental control system operable through a personal computer. Synergy offers an environmental control system internal to the Synergy personal computer or one that may be connected to the serial port of a laptop computer.

### **TEAM**

Microsystems Software  
600 Worcester Rd.  
Framingham, MA 01701  
800-828-2600

TEAM, or Transparent Environmental Access Module, is environmental control software that operates both AC and infrared devices via optional X-modules and infrared controllers and receiver.

### **U-Control**

Words+  
40015 Sierra Highway, Building B-145  
Palmdale, CA 93550  
805-266-8500

U-Control is an environmental control unit operated from a computer-based communication device. U-Control works from any Words+ communication software (EZ Keys, WSKE, Talking Screen) to operate infrared and 110 volt, AC appliances.

### **UCS 1000 with Tongue Touch Keypad**

New Abilities Systems, Inc.  
1940 Colony Street, Suite 2  
Mountain View, CA 94043  
415-988-8889

The UCS 1000 is an integrated system of components that allows the user to access a personal computer, hospital bed, motorized wheelchair and a variety of devices operable through household wiring, via the use of an intra-oral, tongue touch keypad.

### **Ultra 4 Remote System**

TASH  
Unit 1-91 Station Street  
Ajax, ON L1S 3H2  
905-686-4129

The Ultra 4 Remote System controls electrical devices via ultrasound transmission. The hand-held transmitter is intended for use by those with good hand and finger control. Alternate transmitters are available which allow for operation via mouthstick or headpointer, dual switches, or joystick. The user can operate up to four devices per room with the portable transmitter.

### **ViewKey**

VME Technologies, Inc.  
5202 Westland Blvd.  
Baltimore, MD 21227  
410-455-6397

ViewKey is software for Macintosh computers which allows users to "talk", write, and control a variety of devices which operate through household wiring. ViewKey can be operated via eye blink, sip and puff, or other single switch input. Environmental control functions require the purchase of the optional X-10 computer interface and lamp modules.

### **Wireless Remote VCR Controller**

Toys for Special Children  
385 Warburton Ave.  
Hastings-On-Hudson, NY 10706  
800-832-8697

Using infrared technology, this keyboard-type unit uses colorful, clearly-labeled, two inch buttons to control VCR functions such as play, record, fast forward, reverse, and pause.

## Product

**Wireless TV Remote Control**  
Toys for Special Children  
385 Warburton Ave.  
Hastings-On-Hudson, NY 10706  
800-832-8697

**X-10 Home Control Interface**  
X-10 (USA), Inc.  
185A LeGrand Ave.  
Northvale, NJ 07647  
201-784-9700

**X-10 Powerhouse**  
Words+  
40015 Sierra Highway, Building B-145  
Palmdale, CA 93550  
805-266-8500

## Description

Using infrared technology, this keyboard-type unit uses colorful, clearly-labeled, 2 inch buttons to control television channel, sound, and on/off functions.

The X-10 Home Control Interface, via X-10 modules, controls lights and appliances throughout home by sending signals through standard household wiring. The Home Control Interface connects to a Macintosh computer and can program up to 256 X-10 modules.

The X-10 Powerhouse connects to the serial port of a computer or communication device to operate 110 volt AC-controlled appliances.

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